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10/526,160	09/26/2005	Michael Haft	05281-0014	2516
22852 7590 05/01/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER YANG, CHIN JU	
			ART UNIT 2169	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/526,160

Applicant(s)

HAFT ET AL.

Examiner

Chin-ju Yang

Art Unit

2169

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03/08/2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2169

### **DETAILED ACTION**

1. This Office Action is in response to Application No. 10/526,160 filed on March 01, 2005. Claims 1-21 are pending in this application.
2. The specification and the claims have been examined with the results that follow.

### ***Priority***

3. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. As required by M.P.E.P. 201.14(c), acknowledgement is made of applicant's claim for priority based on application filed on September 02, 2002 (Germany 10 40 443.7).
4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

5. The information disclosure statement (IDS) submitted on March 08, 2006 has been placed in the application file. As required by MPEP 609(c), the applicant's submission is acknowledged by the examiner and the cited references therein have been considered as to the merits.

### ***Specification***

6. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Art Unit: 2169

7. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

8. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

9. The disclosure is objected to because of the following informalities:

Art Unit: 2169

- a. Page 12, lines 29, the examiner suggests to replace "unambiguously" with "unambiguity".

### ***Claim Objections***

10. Claims 2, 5-6, 10-12, 14 are objected to because of the following informalities:
  - a. In claim 2, line 4 recites, "which user data records", in the language. The examiner suggests to replace "which" with --the--.
  - b. In claims 6, 10-12, 14, they are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6, 10-12, 14 are not been further treated on the merits. For the purpose of examination, the examiner has presumed that claims 6, 10-12, 14, are depending on claim 1.
  - c. In claim 14, line 3, the examiner suggests to move up the sentence and place it after "claims," in line 2.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2169

12. Claims 10, 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 10, line 4 recites, "the significances" in claim language. There is insufficient antecedent basis for this limitation in the claim.

As per claim 14, lines 3 and 4 recite, "the data warehouse" in claim language. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 101***

13. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 1-21 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 1-15, the applicants disclose the embodiment of the invention as a method for analyzing user data organized according to a database structure. The claimed invention lacks a practical application that qualifies it to be a statutory subject matter under the 35 U.S.C. § 101 Judicial Exceptions. Furthermore, the claimed invention lacks the necessary physical articles or objects to constitute a machine or a

Art Unit: 2169

manufacture within the meaning of 35 U.S.C. § 101. The claims clearly do not represent a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. Insofar, the claimed subject matter fails to produce a result that provides real world value, but an abstract in nature, such as a thought, a computation, or manipulate data. As such, they also fail to fall within any statutory category. They are, at best, functional descriptive material per se.

As per claims 16-21, the applicants disclose the embodiment of the invention as an arrangement, which has modeling and analysis units, and computer program products, for analyzing user data organized according to a database structure. The claimed invention can be reasonably interpreted by one of ordinary in the art as a system comprising software per se. Units constitute functional descriptive material and will be statutory in most cases if they become structurally and functionally interrelated to the computer-readable medium where they are stored. However, software per se alone is not a series of steps or acts and thus is not a process, nor is it a physical article or object that qualified as a machine or manufacture. Moreover, software per se is not a composition of matter that is made up based on a combination of substances. Consequently, the claimed invention does not fall within one of the four statutory classes or 35 U.S.C. § 101. They are, at best, functional descriptive material per se.

***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Heckerman et al. (US 5,704,017).

As per claim 1, Heckerman et al. disclose a method for analyzing user data organized according to a database structure ***[as a database containing empirical data obtained from many people. The empirical data contains attributes of users as well as their preferences; abstract, lines 6-8],***

in which a common statistical probability model is ascertained for the user data organized according to the database structure ***[as the known attributes of a user are received and the belief network is accessed to determine the probability of the unknown preferences of the user given the known attributes. Based on these probabilities, the preference most likely to be desired by the user can be predicted; abstract, lines 19-24],***

in which the user data organized according to the database structure are analyzed using a statistical analysis method, with the statistical analysis method used for the analysis being applied to the common statistical probability model ***[the known attributes of a user are received and the belief network is accessed to determine the probability of the unknown preferences of the user given the known***

Art Unit: 2169

**attributes. Based on these probabilities, the preference most likely to be desired by the user can be predicted; abstract, lines 19-24].**

As per claim 2, Heckerman et al. disclose the user data organized according to the database structure are organized into user data records, which user data records each represent an object, with the user data in a user data record describing properties of the respective object **[as database 316 contains a number of records 502, 504, and 506 which are each referred to as a case. One skilled in the art will appreciate that although three cases are depicted, the database 316 will usually contain many more cases. Each case 502, 504, 506 indicates observed data for a particular user; col 9, lines 14-19].**

As per claim 3, Heckerman et al. disclose the common statistical probability model is ascertained on the basis of a hidden variable **[as constructing an initial belief network with at least one hidden variable, creating the prior probability and identifying a range of a number of states for the hidden variable; col 9, lines 54-57].**

As per claim 4, Heckerman et al. disclose the common statistical probability model is ascertained on the basis of structure learning **[as After relearning the belief network a number of times, the belief network is used to predict the preferences of a user using probabilistic inference; abstract, lines 16-19].**

Art Unit: 2169

As per claim 5, Heckerman et al. disclose the statistical analysis method is applied to the common statistical probability model such that a common probability in the common probability model is used as input variable for the statistical analysis method ***[as identify one or more causal attributes, processing continues to step 712 where the administrator determines whether data can be measured for the identified causal attributes (step 712); col 11, lines 21-34].***

As per claim 6, Heckerman et al. disclose the statistical analysis method used is a method based on a data mining method ***[as utilizing the belief network in the preferred collaborative filtering system to predict the preferences of a user based on known attributes of the user; col 19, lines 64-67].***

As per claim 7, Heckerman et al. disclose the statistical analysis method used is a clustering method ***[as a collaborative filtering system uses any of a number of well-known clustering algorithms to divide the database into a number of clusters; col 2, lines 9-12].***

As per claim 8, Heckerman et al. disclose the statistical analysis method used is a method known by the name "association rules" ***[as determine which causal attribute affects a caused attribute by indicating an arc from the causal attribute to the caused attribute; col 8, lines 58-60].***

Art Unit: 2169

As per claim 9, Heckerman et al. disclose the statistical analysis method used is a decision tree **[as Fig. 2]**.

As per claim 10, Heckerman et al. disclose the analysis using the statistical analysis method involved dependencies between the user data being ascertained and/or the significances thereof being ascertained on the basis of a statistical test **[as determine the dependencies among the variables (the arcs) and the probability distributions that quantify the strengths of the dependencies; col 7, lines 15-18]**.

As per claim 11, Heckerman et al. disclose the common statistical probability model is ascertained and the common statistical probability model is analyzed by the statistical analysis method at different times and locations **[as the belief network is relearned at various intervals when additional attributes are identified as having a causal effect on the preferences and data for these additional attributes can be gathered; col 4, lines 47-50]**.

As per claim 12, Heckerman et al. disclose the user data are stored in a database **[as The data in the database is obtained by collecting attributes of the users and their preferences; col 1, lines 34-36]**.

As per claim 13, Heckerman et al. disclose the object is a customer who is described by at least two of the following properties: age, income, product purchased,

Art Unit: 2169

date of purchase, frequency of purchase ***[as the attributes of the user may include their age, gender, and income; col 1, lines 16-17].***

As per claim 14, Heckerman et al. disclose the method used in the data warehouse, with the user data describing the data warehouse ***[as generating a belief network based on the prior knowledge 318 and information contained within the database 316; col 8, lines 4-6].***

As per claim 15, Heckerman et al. disclose the method used in customer relationship management or supply chain management, with the user data being customer data or product data ***[as To help market a company's products, data can be gathered from prior purchases by all customers and the products of interest to a particular customer can be predicted based on their known attributes or preferences; col 20, lines 30-34].***

As per claim 16, Heckerman et al. disclose an arrangement for analyzing user data organized according to a database structure ***[as a collaborative filtering system is provided for predicting a desired preference of a user based on attributes of the user; col 3, lines 55-57],***

having a modeling unit which can be used to ascertain a common statistical probability model for ascertain a common statistical probability model for the user data organized according to the data base structure ***[as output component indicates the***

Art. Unit: 2169

***available preference having the greatest likelihood of being the desired preference; col 4, lines 2-4],***

having an analysis unit which can be used to analyze the user data organized according to the database structure using a statistical analysis method such that the statistical analysis method used for the analysis is applied to the common statistical probability model ***[as determination component determines the available preference having the greatest likelihood of being the desired preference by evaluating the probabilities of the preference nodes; col 3, lines 66-67 to col 4, lines 1-2].***

As per claim 17, Heckerman et al. disclose a computer program product which comprises a computer-readable storage medium storing a program which, after it has been loaded into a memory in a computer, allows the computer to perform the following steps to analyze user data organized according to a database structure ***[as FIG. 3 depicts a block diagram of a computer 300 suitable for practicing the preferred embodiment of the present invention. The computer 300 contains a memory 302, a secondary storage device 304, a video display 306, an input device 308 and a central processing unit (CPU) 310. The memory 302 contains a network generator 312 and a preferred collaborative filtering system 314. The secondary storage device 304 contains a database 316 and prior knowledge 318; col 7, lines 62-67 to col 8, lines 1-3]:***

a common statistical probability model is ascertained for the user data organized

Art Unit: 2169

according to the database structure **[as a database containing empirical data obtained from many people. The empirical data contains attributes of users as well as their preferences; abstract, lines 6-8],**

the user data organized according to the database structure are analyzed using a statistical analysis method, with the statistical analysis method used for the analysis, being applied to the common statistical probability model **[as the known attributes of a user are received and the belief network is accessed to determine the probability of the unknown preferences of the user given the known attributes. Based on these probabilities, the preference most likely to be desired by the user can be predicted, lines 19-24].**

As per claim 18, Heckerman et al. disclose a computer-readable storage medium storing a program which, when it has been loaded into a memory in a computer, allows the computer to perform the following steps to analyze user data organized according to a database structure **[as FIG. 3 depicts a block diagram of a computer 300 suitable for practicing the preferred embodiment of the present invention. The computer 300 contains a memory 302, a secondary storage device 304, a video display 306, an input device 308 and a central processing unit (CPU) 310. The memory 302 contains a network generator 312 and a preferred collaborative filtering system 314. The secondary storage device 304 contains a database 316 and prior knowledge 318; col 7, lines 62-67 to col 8, lines 1-3].**

a common statistical probability model is ascertained for the user data organized

Art Unit: 2169

according to the database structure **[as a database containing empirical data obtained from many people. The empirical data contains attributes of users as well as their preferences; abstract, lines 6-8].**

the user data organized according to the database structure are analyzed using a statistical analysis method, with the statistical analysis method used for the analysis being applied to the common statistical probability model **[as the known attributes of a user are received and the belief network is accessed to determine the probability of the unknown preferences of the user given the known attributes. Based on these probabilities, the preference most likely to be desired by the user can be predicted, lines 19-24].**

As per claim 19, Heckerman et al. disclose a computer program having program code means for performing all of the steps as claimed in claim 1 when the program is executed on a computer **[as computer-readable media that causes a collaborative filtering system in a computer system to predict a desired preference of a user; col 25, lines 1-3].**

As per claim 20, Heckerman et al. disclose the computer program having program code means as claimed in claim 18 which are stored on a computer-readable data storage medium **[as The memory 302 contains a network generator 312 and a preferred collaborative filtering system 314; col 7, line 67 to col 8, lines 1-2].**

Art Unit: 2169

As per claim 21, Heckerman et al. disclose a computer program product having program code means stored on a machine-readable medium for performing all of the steps as claimed in claim 1 when the program is executed on a computer *[as computer-readable media that causes a collaborative filtering system in a computer system to predict a desired preference of a user; col 25, lines 1-3]*.

### **Conclusion**

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111 (c) to consider these references fully when responding to this action. The documents cited therein teach statistical analysis of database records.

18. The examiner requests, in response to this Office action, support to be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

Art Unit: 2169

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chin-ju Yang whose telephone number is 571-272-9783. The examiner can normally be reached on Monday Through Friday, 8:30AM to 6:00PM EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pierre Vital can be reached on 571-272-4215. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 19, 2007

*DL*

  
Chin-ju Yang  
Art Unit 2169

  
PIERRE VITAL  
SUPERVISORY PATENT EXAMINER